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NITROGEN GROUPS IN THE BLOOD OF EXPERIMENTAL ANIMALS DUE TO POISONING BY ANTIFREEZE

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This study was conducted on rabbits, injected with antifreeze in the amount of 10-11 cubic centimeters per kilogram weight. A dynamic analysis was made of the nitrogen contained in nonprotein fractions in the poisoned animals. The study was conducted for a month, after which the surviving animals were killed.

In spite of the use of identical doses of poison, the severity of the clinical course and the corresponding changes in the blood varied considerably. In the group of rabbits in which the amount of nonprotein nitrogen in the blood exceeded 200 milligram percent and went as high as 450 milligram percent in one case, symptoms of poisoning were very severe and as a rule resulted in death.

In the cases where the nonprotein nitrogen was within the limits of 100-200 milligram percent, the death rate was lower, and the toxic phenomena were expressed more weakly than in the preceding group.

In both groups the increase in the nonprotein nitrogen was chiefly due to the increase in the quantity of urea nitrogen, which amounted to nearly 80 percent of all the nonprotein nitrogen. Amino acid and ammonia nitrogen increased somewhat in animals of the first group.

In both groups the percentage of reduction of other undetermined nitrogen matched the increase of nonprotein nitrogen. In the remaining animals the increase in the amount of nonprotein nitrogen did not exceed 90 milligram percent and death among these animals was rare. The increase of nonprotein nitrogen in these cases was due entirely to the increase in urea nitrogen because

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the amount of amino acid and ammonia nitrogen showed no change. The increase in nonprotein nitrogen in the blood of the poisoned animals was found the first day after the injection of the poison, and the surviving animals generally indicated a reduction in the amount of nonprotein nitrogen along with the disappearance of the clinical symptoms of poisoning.

The authors arrived at the conclusion that in poisoning by antifreeze the kidneys are the first affected, which fact is verified by the increase of urea nitrogen and in some cases of ammonia in the blood. In severe poisoning, the pathological process extends to the liver, and this is indicated by the accumulation of amino acid nitrogen in the blood.

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